pressure in uncomplicated diabetes is normal or slightly under normal. In every case of elevated blood pressure in this series I found complications such as aortitis, arteriosclerosis, nephritis, cardiac hypertrophy and aortic endocarditis. In conditions of acidosis the blood pressure falls. The presence or absence of hyperglycemia had no effect on the blood pressure.

118 (1700)

The antigenic properties of ragweed pollen.

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Although most of the evidence would lead one to believe that pollens are antigenic, there are a few experimenters who still hold to a contrary opinion because they have been unable to produce antibodies to pollens. The question is of interest in its relation to hay fever. If pollens are antigenic, the anaphylactic nature of hay fever may be regarded as at least a possible explanation of the phenomenon. As pollens contain protein, although in small amounts, it would naturally be assumed that when sufficiently large quantities of pollen have been injected and delicate enough tests performed, antibodies could be shown to be present.

Although we have only two experiments to report, our results are so convincing that we feel that a definite conclusion is justifiable. These results were obtained by testing the isolated uteri of sensitized guinea pigs by the Dale Method.

EXPERIMENT I.

Three female guinea pigs were sensitized with pollen extract prepared as follows: 500 mg. of ground Mulford high ragweed pollen were shaken in a bottle in 200 c.c. of 0.04 per cent. NaOH in physiological salt solution for at least an hour on three successive days. This material was centrifugalized and the clear supernatant fluid, which gave the Millon and zanthroproteic protein tests, was injected intraperitoneally into the three guinea pigs. 70 c.c.

in all were given to each guinea pig during the course of seven weeks. The last injection was given November 29, 1920. We attach considerable importance to the method of sensitization which was similar to that found best in this laboratory in the case of bacterial proteins. We did not rely on one or two sensitizing injections, but injected every day for several weeks.

The uteri of the three treated guinea pigs were tested by the Dale method on December 22 and 23, 1920. The uteri of two normal pigs were also tested. 3 c.c. of the pollen extract when added to the bath of 200 c.c. Ringer's solution had no effect on the normal uteri; while 1 or 2 c.c. of the same extract produced marked contraction and prolonged spasm of the sensitized uteri. In one instance, 3 c.c. completely desensitized one horn of a sensitized uterus to the further instillation of 3 c.c. of pollen extract into the bath.

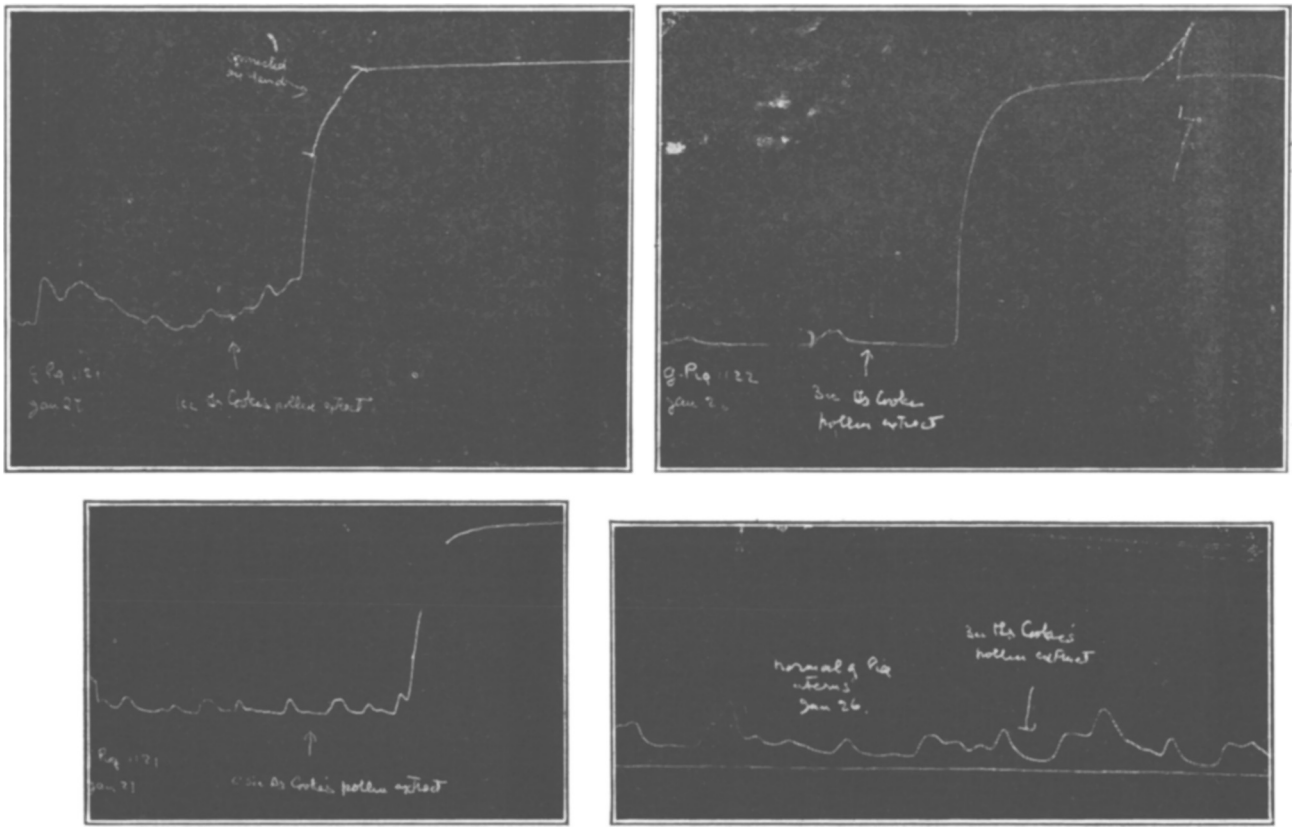
The extract added to the bath in the Experiment I was prepared by extracting the pollen with 0.02 per cent. Na_2CO_3, instead of with 0.04 per cent. NaOH.

The graphic record of this experiment is omitted because it is in principle exactly like the record of Experiment II, which is given below.

In view of the fact that clinical observers, Cooke and Vander Veer, were obtaining skin reactions with pollen extracts, the antigenic nature of which they, as well as Coca, denied, it was natural to think of the possibility that our preparations might be fundamentally different from the ones they were using. It was of course of great practical importance to determine whether or not their preparation would fail to show antigenic properties if tested by our methods. Accordingly, we obtained from Dr. Cooke a specimen of the preparation of pollen actually used by them on patients, and the sensitiveness of the guinea pigs sensitized by the method described above, was then tested with this material.

EXPERIMENT II.

Two female guinea pigs, No. 1121 and No. 1122 were sensitized with Mulford high ragweed pollen extracted with 0.02 per cent. Na_2CO_3 solution. 36 c.c. in all, in doses of 2 c.c., were given to each guinea pig in the course of 17 days. The last injection was given on December 31, 1920.



Guinea Pigs No. 1121 and No. 1122, and a normal guinea pig. Two guinea pigs, No. 1121 and No. 1122, injected intraperitoneally every day with an 0.02 per cent. sodium carbonate extract of Mulford high rag-weed pollen in physiological salt solution. Total amount injected, 36 c.c. Last injection received December 31st, 1920. Uteri of guinea pigs No. 1121 and No. 1122 and the uterus of a normal guinea pig tested with Dr. Cooke's pollen extract on January 26th and 27th. This was a sodium carbonate extract of both high and low rag-weed pollen. Uterus of guinea pig No. 1122 was found desensitized to 3 c.c. of the sodium carbonate high rag-weed extract 29 minutes after Dr. Cooke's extract had been instilled in the bath. Volume of bath = 200 c.c.

The uteri of the 2 sensitized pigs and one normal pig were tested by the Dale method on January 26 and 27, 1921, with some mixed high and low ragweed pollen extract kindly given us by Dr. Robert Cooke.

3 c.c. of this extract when added to the bath of 200 c.c. of Ringer's solution had no effect on the normal uterus. 3 c.c. of the same pollen extract produced marked contraction and spasm on one horn of guinea pig uterus No. 1122, and 29 minutes later this horn was found desensitized to 3 c.c. of our Na_2CO_3 extract. The second horn of uterus No. 1122 was found very irritable and could not be used. Both horns of the uterus of sensitized guinea pig No. 1121 responded with marked contraction to 1 c.c. and 0.5 c.c., respectively, of Dr. Cooke's extract. For records of this experiment see curve.

It would seem, therefore ,hardly possible to doubt that ragweed pollen is antigenic and that the negative results obtained by other workers were probably due to their not having employed adequate methods of sensitization or sufficiently sensitive tests. We may, therefore, assert the antigenic nature of ragweed extracts, without wishing at the present time to draw any theoretical conclusions as to the anaphylactic nature of hay fever.

119 (1701)

The early effects of conjugation on the division rate of Spathidium spathula.

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Conjugation occurred readily in a pedigree culture of *Spathidium spathula* and therefore experiments were started to determine the effects of fertilization in the life history of the organism. During the first six months of the work, more than sixty lines were derived directly or indirectly from the parent line by conjugation. Some of the exconjugant lines studied represent the F_1, F_2, F_3, and F_4 generations. All the lines which are compared were bred under identical cultural conditions.

A comparison of the number of generations attained by each